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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/622,563 | 07/18/2003 | J. David Greco | SPC 0405 NA/40719.766 | 4818 |

7590 04/26/2005

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| EXAMINER |
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ALSOMIRI, ISAM A

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| ART UNIT | PAPER NUMBER |
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3662

DATE MAILED: 04/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/622,563

Applicant(s)

GRECO, J. DAVID

Examiner

Isam Alsomiri

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 5-16, 20-22 and 25-29 is/are rejected.
- 7) ☒ Claim(s) 3, 4, 17-19, 23 and 24 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Terminal Disclaimer

The terminal disclaimer filed on January 24, 2005 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of 6,621,560 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 5, 11, 12-15, 16, 20, 25, and 26-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gerard et al. U.S. 5,689,330 in view of Lopes et al. U.S. 4,779,353.

With regard to claims 1, 2, 16 and 20, Gerard teaches a transmitter for projecting a beam of laser light, comprising: a source of laser light (see column 3, line 3)., a projection arrangement for directing the laser light from said transmitter, said projection arrangement including a level vial 24., a temperature sensor circuit for detecting error induced by temperature change where said error is a function of vial temperature of said level vial itself and a temperature correction circuit, responsive to said temperature sensor circuit, that adjusts said projection arrangement to compensate the direction of

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the laser light as a result of said error detected by said temperature sensor circuit (see column 3, line 39 to column 4, line 43).

Gerard does not teach the claimed detecting the temperature of the level vial itself by connection to the first, second, and common lead. However, detecting the temperature of the vial directly is well known. Lopes teaches a level vial which the temperature is measured directly through connection to the level wires 35, 25, 30 (see col. 13 lines 23-28). Therefore, It would have been obvious to modify Gerard to measure the temperature of the vial itself for more accurate measurement of the level vial to generate a more accurate compensation signal.

With regard to claim 5, Gerard teaches that the level vial has first and second leads 26 and a common lead 28, wherein inclination of said level vial is detected by monitoring a first resistance between said first lead and said common lead and a second resistance between said second lead and said common lead.

With regard to claims 11 and 25, Gerard teaches that the projection arrangement for directing the laser light at a selected grade includes an arrangement for changing the direction of the beam until the selected grade is reached (servo motors 54), and in which the temperature correction circuit includes a circuit for providing an offset grade value to the arrangement for changing the direction of the beam until the selected grade is reached, whereby the level vial which provides an electrical signal indicating that the laser light is being projected at the selected grade (column 4, line 17-43).

With regard to claims 12 and 26, Gerard teaches that the circuit for providing an offset grade value to the arrangement for changing the direction of the beam includes a

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look-up table having offset grade values and vial temperatures associated with specific temperatures (column 4, lines 26-30). Gerard teaches the use of a tilt/drift v.

temperature curve that may be read as being a look-up table. Temperature values read from the sensor are "looked up" on the curve to determine the amount of offset due to the sensed temperature.

With regard to claims 15 and 29, Gerard teaches that offset grade values are unique to a specific transmitter and level vial incorporated therein (see column 4, lines 40-43).

With regard to claims 13 and 27, Gerard teaches the determination of a look-up table that comprises a tilt/drift v. temperature curve. In order to determine this curve, at least three offset values associated with at least three temperature ranges must be known because if any less were known, the curve of the table would not be known. Therefore, it would have been obvious in the creation of the tilt v. temperature curve taught by Gerard to determine at least three offset values associated with at least three temperature ranges.

With regard to claims 14 and 28, Gerard teaches the calculation of grade offset associated with vial temperature and storing the values in a lookup table. However, Greco does not explicitly teach the interpolation of grade offsets and corresponding vial temperatures in the lookup table. However, it is well known in mathematics that a series of data in a table may be interpolated to determine values that are not stated expressly in the table. Therefore, it would have been obvious to interpolate the data to determine grade offsets for temperature values not expressly stated in the table.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gerard et al. U.S. 5,689,330 in view of Lopes et al. U.S. 4,779,353. and U.S. Patent No. 5,146,688 to Ito (hereinafter "Ito").

Gerard teaches that the projection arrangement includes a level vial with a pair of end electrodes 26 electrically communicating with the upper portions of the chamber of the vial's opposite ends and extending toward the central portion of the chamber, and a common electrode 28 electrically communicating with the lower portion of the chamber in which the temperature sensor includes a current sensor circuit for sensing the resistivity of the electrodes across the interior of the vial. Gerard does not explicitly teach (although it may be inherent with the type of level vial taught by Gerard) that the level vial comprises an electrically nonconductive vial casing defining an elongated chamber which curves generally downward with a quantity of electrically conductive fluid in the chamber. Ito, however, teaches a level vial with this structure (as seen in figure 1) that includes two electrodes across the top and a common electrode on the bottom for measuring the resistivity of the electrodes across the electrically conductive fluid within the casing. It would have been obvious to use the level vial taught by Ito as the level vial in the apparatus taught by Gerard because both have the same connections and measure the deviation from level in the same manner.

Allowable Subject Matter

Claims 3, 4, 17-19, 23, and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments with respect to claims 1 and 16 (and the dependent claims) have been considered but are moot in view of the new ground(s) of rejection.

Applicant's arguments filed January 24, 2005 have been fully considered but they are not persuasive. With respect to claim 20, applicant argues that "detecting the resistance of the quantity of fluid in the level vial. '330 simply has no such circuitry". However, applicant attention is referred to column 1 lines 30-33, Gerard clearly teaches detecting the resistance of the quantity of fluid in the level vial. Therefore, the rejections are maintained.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Isam Alsomiri whose telephone number is 571-272-6970. The examiner can normally be reached on Monday-Friday 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Tarcza can be reached on 571-272-6979. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

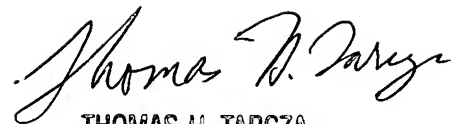
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Isam Alsomiri



April 17, 2005



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